

DETAILED ACTION

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

In the Abstract, combine the two paragraphs into one paragraph.

The Abstract of the application has been amended as follows:

"This invention provides a dripping nozzle device to produce ADU particles with good sphericity, a device for recovering a feedstock liquid to prepare a uniform feedstock liquid, a device for supplying a feedstock liquid to form drops with a uniform volume, a device for solidifying the surfaces of drops so that the drops will not deform easily when they fall onto and hit the surface of an aqueous ammonia solution, a device for circulating an aqueous ammonia solution so that the uranyl nitrate in the drops can be changed to ammonium diuranate completely, to such an extent that uranyl nitrate in the center of each drop is changed to ammonium diuranate, and an apparatus for producing ammonium diuranate particles with good sphericity. The dripping nozzle device is provided with a single vibrator to vibrate nozzles simultaneously. The device for recovering a feedstock liquid recovers the feedstock liquid remaining in the nozzles and mixes it with a fresh feedstock liquid. The device for supplying a feedstock liquid is

provided with a light irradiator for irradiating falling drops with light. The device for solidifying the surfaces of drops sprays ammonia gas over each of the paths along which the drops dripping from the nozzles fall. The device for circulating an aqueous ammonia solution enables drops to flow upward in the aqueous ammonia solution in the aqueous ammonia solution reservoir. The apparatus for producing ammonium diuranate utilizes these devices".

Allowable Subject Matter

1. Claims 8, 12-14, 17-18, 26-46 are allowed.
2. The following is an examiner's statement of reasons for allowance:
3. Regarding Claims 8 and 36, the closest prior art, **Yoshimuta (JP-H5 ('93)-279043 A)** discloses the claimed device except for a remaining feedstock liquid collector placed between dripping nozzles and the aqueous ammonia solution for receiving a remainder of the feedstock liquid remaining in the feedstock liquid transferring passage when the dripping of the feedstock liquid is stopped and a feedstock liquid remainder transferring passage for transferring the remainder to the feedstock liquid reservoir. **Langen et al. (US Patent No. 4,224,258)** discloses a dripping device comprising a diaphragm 7 and funnel 8 placing between a dripping nozzle and the aqueous ammonia solution for diverting the liquid emanating from the nozzle through the funnel 8 when the droplets are not sufficiently uniform (**Figure 1**). However, this structure is only used with the horizontal dripping nozzle. There is no suggestion/motivation for using this structure for the vertical dripping nozzle (**Langen et al. – Figure 2**).

4. Claims 26-27 directly or indirectly depend on Claims 1 and 36 respectively.
5. Regarding Claim 12, the closest prior art, **Yoshimuta (JP-H5 ('93)-279043 A)** discloses the claimed device except for a light irradiator comprising a strobe light irradiator for emitting a light that **flashes on and off periodically** for irradiating with the strobe light irradiator drops of a feedstock liquid. **Ryota (JP-2000-146993A)** discloses an apparatus for detection of moving object using light from a continuum irradiated light source.
6. Claims 28-29 and 42 directly depend on Claim 12.
7. Regarding Claim 13, the closest prior art, **Yoshimuta (JP-H5 ('93)-279043 A)** discloses the claimed device except for flow regulator and a controller for controlling the flow regulators upon an input of a sensing signal outputted by the photosensors so that the nozzles drip at the **same dripping rate**, the **same drop volume** from all nozzles. **Ryota (JP-2000-146993A)** discloses an apparatus for detection of moving objects using light from a continuum irradiated light source for determining the volume and velocity of a single moving drop, but Ryota does not disclose the flow regulator and the controller for controlling the flow regulator so that the nozzles drip at the same dripping rate, the same drop volume from all nozzles.
8. Claims 40-43 directly depend on Claim 13.
9. Regarding Claim 14, the closest prior art, **Yoshimuta (JP-H5 ('93)-279043 A)** discloses the claimed device except for **an overflow receiver** for receiving the aqueous ammonia solution overflowing through the overflow discharging hole to keep the distance between the ends of the dripping nozzles and the surface of the aqueous

ammonia solution **constant** since the aqueous solution discharger (19) of Yoshimuta circulated the aqueous ammonia solution from the top of the settling tank (13) to the bottom of the tank, but does not remove the solution out of the settling tank.

10. Claims 17-18, 30-35 and 44-46 directly or indirectly depend on Claim 14.
11. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUY-TRAM NGUYEN whose telephone number is (571)270-3167. The examiner can normally be reached on MON- THURS: 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on 571-272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HTN
5/27/2010

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1797